Engineers & Society

CHAPTER 3 (Part 1)

PROFESSIONAL CODES OF ETHICS

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What is Ethics

* The science of determining what ought to be done in different circumstances and situations
* The objective is:
  * To do good to most people
  * Less harm to most people
* Study of the **morality** of human actions

What is Ethics

* **Ethics** and **morals** relate to “right” and “wrong” conduct.
* **Ethics** refer to rules provided by an external source, e.g., codes of conduct in workplaces or principles in religions.
* **Morals** refer to an individual’s own principles regarding right and wrong.
* they are sometimes used interchangeably

What is Ethics

	Ethics	Morals
What are they?	The rules of conduct recognized in respect to a particular class of human actions or a particular group or culture.	Principles or habits with respect to right or wrong conduct. While morals also prescribe dos and don'ts, morality is ultimately a personal compass of right and wrong.
Where do they come from?	Social system - External	Individual - Internal
Why we do it?	Because society says it is the right thing to do.	Because we believe in something being right or wrong.
Flexibility	Ethics are dependent on others for definition. They tend to be consistent within a certain context, but can vary between contexts.	Usually consistent, although can change if an individual's beliefs change.

http://www.antiessays.com/free-essays/Cmm3703-762676.html

How to solve “ethic” problems?

* Unlike technical field, solving problems related to ethics need several approaches
* Several ethical theories need and can be considered before making a decision
* This shows the level of complexity
* Although several theories are considered, ethical problem-solving usually leads to single solution

Ethical theory

* A moral theory defines terms in uniform ways and links ideas and problems together in consistent. This is exactly how the scientific theories used in other engineering classes function.
* Several theories are considered:
  * Relativism
  * Utilitarianism
  * Duty ethics and rights ethics
  * Virtue ethics

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Relativism

* Ethical relativism assert that there is no accepted, universal definition of right and wrong. Ethics is relative to one's own society or organization.
* For example, in the West it is acceptable to kiss in public, rather unacceptable in the East.

Source: http://madeeasypublications.org/document/book/10.%20Ethics%20and%20Values%20in%20Engineering%20Profession.pdf

Utilitarianism

* Utilitarianism holds that those actions are good if it serves to maximize human well-being.
* The emphasis in utilitarianism is not on maximizing the well-being of the individual, but rather on maximizing the well-being of society as a whole, and as such it is somewhat of a collectivist approach.
* For example, the building of a dam is acceptable although it disrupts the ecology and local household since it benefits society with drinking water and avoiding floods.

Source: http://madeeasypublications.org/document/book/10.%20Ethics%20and%20Values%20in%20Engineering%20Profession.pdf

Utilitarianism

* Two main flavors of utilitarianism:
  * Act utilitarianism
  * Rule utilitarianism
* Act utilitarianism focuses on individual actions rather than on rules.
* Rule utilitarianism holds that although adhering to these rules might not always maximize good in a particular situation, overall, adhering to moral rules will ultimately lead to the most good.

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Utilitarianism

* What do you think are the advantages and disadvantages of utilitarianism?

Duty ethics and Rights ethics

* These theories hold actions that are good as those that respect the rights of the individual.
* Here, good consequences for society as a whole are not the only moral consideration.
* Rights ethics holds that people have fundamental rights that other people have a duty to respect.
* In duty ethics, people have duties, an important one of which is to protect and respect the rights of others.

Source: http://madeeasypublications.org/document/book/10.%20Ethics%20and%20Values%20in%20Engineering%20Profession.pdf

Virtue ethics

* Fundamentally, virtue ethics is interested in determining what kind of people we should be.
* Virtue is often defined as moral distinction and goodness. A virtuous person exhibits good and beneficial qualities.
* In virtue ethics, actions are considered right if they support good character traits (virtues) and wrong if they support bad character traits (vices).

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Applied ethics

* Society would choose its ethical theory and then use that theory to derive an ideal set of rules for ethical behavior.
* Our society has a legal system that enforces a set of rules we live with as citizens and as members of our profession. But of course it was not derived purely from any single theory.
* You may find many legal things are regarded as not moral by some substantial segment of society.

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Case Study: Lying

* XYZ Corporation permits its employees to borrow company tools. Engineer Lim took full advantage of this privilege. He went one step further and ordered tools for his unit that would be useful for his home building projects even though they were of no significant use to his unit at XYZ. Engineer Kumarajah had suspected for some time that Lim was ordering tools for personal rather than company use, but he had no unambiguous evidence until he overheard a revealing conversation between Lim and Salman, a contract salesman from whom Lim frequently purchased tools.

http://www.onlineethics.org/Resources/Cases/CompanyResources.aspx

Case Study: Lying

* Kumarajah was reluctant to directly confront Lim. They had never gotten along well, and Lim was a senior engineer who wielded a great deal of power over Kumarajah in their unit. Kumarajah was also reluctant to discuss the matter with the chief engineer of their unit, in whom he had little confidence or trust.

http://www.onlineethics.org/Resources/Cases/CompanyResources.aspx

Case Study: Lying

* Eventually Kumarajah decided to talk with the Finance Officer, whose immediate response was, "This really stinks." The officer agreed not to reveal that Kumarajah had talked with him. He then called the chief engineer, indicating only that a reliable source had informed him about Lim's inappropriate purchases. In turn, the chief engineer confronted Lim. Finally, Lim directly confronted each of the engineers in his unit he thought might have complained against him. When Lim questioned Kumarajah, Kumarajah denied any knowledge of what took place. Later Kumarajah explained to his wife, "I was forced to lie. I told Lim, 'I don't know anything about this'."

http://www.onlineethics.org/Resources/Cases/CompanyResources.aspx

Questions

* Do you think it was ethical for Kumarajah to lie?
* Was it ethical for Lim to put pressure on his staff?
* What would be an alternative to Kumarajah's action?

Engineering Ethics

Engineering ethics

* Ethics is the study of the morality of human actions
* Engineering ethics is the study of defining the proper courses of action when professional engineers deal with each other, their clients, their employers/ employees and general public

Engineering ethics

* Why is engineering ethics so important?
* Professionals posses specialized knowledge that is superior to that possessed by their clients, employers and the general public
* With this knowledge, a responsible and honest (read: ethical) engineer will be a useful member of the society
* An unethical engineer will tarnish the reputation of engineers, weaken the public's confidence and become a dangerous member of the society

Moral foundations

* Moral foundations:
  * Utilitarianism
  * Duty Ethics
  * Right ethics
  * Virtue ethics

Codes of Engineering Ethics

* Engineers attempt to establish rules or standards of conduct for engineers
* No single code of ethics for all engineering societies
* However, a lot of similarities in different code of ethics from different societies

Importance of Code of Ethics

* To protect the public from abuse of knowledge
* As general guides to professional conduct
* Prevent reckless or malicious criticism among members
* To instil trust and confidence to the public on the profession

Code of Ethics (NSPE)

* Behave in an honorable and dignified manner.
* Protect the public safety, health, and welfare.
* Protect the environment.
* Perform duties only in areas of competence.
* Continue learning to sharpen technical skills.
* Be truthful and objective.
* Protect confidential information of employer or client.

Code of Ethics (cont.)

* Do not accept bribes, or gifts that would interfere with engineering judgment.
* Avoid conflicts of interest.
* Avoid injuring others, their property, reputation, or employment by false or malicious action
* Be involved with civic and community affairs.

IEEE Code of Ethics

* We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree:

Source: https://www.ieee.org/about/ieee_code_of_conduct.pdf

IEEE Code of Ethics

* 1. to accept responsibility in making engineering decisions consistent with the safety, health and welfare of the public, and to disclose promptly factors that might endanger the public or the environment;
* 2. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;

Source: https://www.ieee.org/about/ieee_code_of_conduct.pdf

IEEE Code of Ethics

* 3. to be honest and realistic in stating claims or estimates based on available data;
* 4. to reject bribery in all its forms;
* 5. to improve the understanding of technology, its appropriate application, and potential consequences;

Source: https://www.ieee.org/about/ieee_code_of_conduct.pdf

IEEE Code of Ethics

* 6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;
* 7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;

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IEEE Code of Ethics

* 8. to treat fairly all persons regardless of such factors as race, religion, gender, disability, age, or national origin;
* 9. to avoid injuring others, their property, reputation, or employment by false or malicious action;

Source: https://www.ieee.org/about/ieee_code_of_conduct.pdf

IEEE Code of Ethics

* 10. to assist colleagues and co-workers in their professional development and to support them in following this code of ethics.
* *Approved by the IEEE Board of Directors*
  August 1990

Source: https://www.ieee.org/about/ieee_code_of_conduct.pdf

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